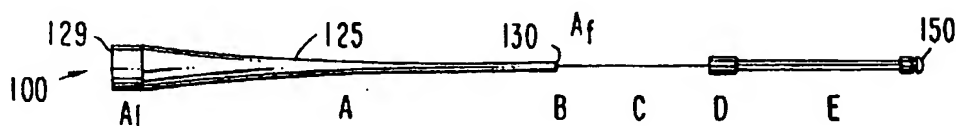




(21) (A1) **2,251,096**  
(86) 1998/02/12  
(87) 1998/08/20

- (72) LEVIN, Philip S., US  
(72) SALTONSTALL, Jon, US  
(72) NGUYEN, Loi, US  
(72) ROSENSCHEIN, Uri, IL  
(71) ANGIOSONICS INC., US  
(51) Int.Cl.<sup>6</sup> A61B 17/36, A61B 17/22  
(30) 1997/02/13 (60/038,180) US  
(30) 1997/05/19 (08/858,247) US  
(54) **APPAREIL D'EMISSION D'ULTRASONS ET PROCEDE  
D'UTILISATION ASSOCIE**  
(54) **ULTRASOUND TRANSMISSION APPARATUS AND METHOD  
OF USING SAME**



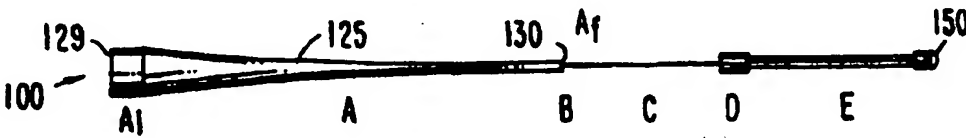
(57) L'invention concerne un procédé et un système de traitement aux ultrasons de pathologies endovasculaires, comme des régions sténosées ou occluses de vaisseaux sanguins. Ce système de traitement aux ultrasons comprend une sonde ultrasonore présentant une extrémité proximale et une extrémité distale. On peut également utiliser un cathéter-guide et un fil-guide, et on peut coulisser la sonde dans la lumière intérieure du cathéter. La sonde peut présenter au niveau de son extrémité proximale une trompe, un élément de transmission, lequel présente une extrémité proximale et une extrémité distale et est relié à la trompe au niveau de son extrémité proximale, ainsi qu'un embout distal relié à l'extrémité distale de l'élément de transmission. Cet élément peut comporter un ou plusieurs fils de transmission, dotés d'extrémités proximales et distales, et reliés en série ou en parallèle.

(57) An ultrasonic treatment system and method for utilizing ultrasound to treat intravascular conditions, such as stenotic and occluded regions of blood vessels, are provided. The ultrasonic treatment system includes an ultrasonic probe (100), having a proximal and distal end. A guide catheter and guidewire may also be provided and the probe (100) can be slidably disposed within the guide catheter's inner lumen. The probe can include a horn (125) at the proximal end, a transmission member (B, C, D, E) with a proximal and a distal end connected to the horn at the transmission member proximal end (B), and a distal tip (150) connected at the transmission member's distal end. The transmission member may include one or more transmission wires (C, E), having proximal and distal ends connected serially or in parallel.



**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b>  <b>A61B 17/36</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/35721</b>  <b>(43) International Publication Date:</b> 20 August 1998 (20.08.98)
<b>(21) International Application Number:</b> PCT/US98/02607 <b>(22) International Filing Date:</b> 12 February 1998 (12.02.98)  <b>(30) Priority Data:</b> 60/038,180 13 February 1997 (13.02.97) US 08/858,247 19 May 1997 (19.05.97) US  <b>(71) Applicant:</b> ANGIOSONICS INC. [US/US]; Suite 207, 2200 Gateway Centre Boulevard, Morrisville, NC 27560 (US).  <b>(72) Inventors:</b> LEVIN, Philip, S.; 531 Thompson Road, Thompson, CT 06277 (US). SALTONSTALL, Jon; 58 Till Rock Lane, Norwell, MA 02061 (US). NGUYEN, Loi; 7-2 High Rock Way #2, Allston, MA 02134 (US). ROSENSCHEIN, Uri; Kfar Daniel, 73125 Israel (IL).  <b>(74) Agents:</b> POKOTILOW, Steven, B. et al.; Stroock & Stroock & Lavan, 180 Malden Lane, New York, NY 10038 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  Published <i>With international search report.</i>  <b>(88) Date of publication of the international search report:</b> 8 October 1998 (08.10.98)
<b>(54) Title:</b> ULTRASOUND TRANSMISSION APPARATUS AND METHOD OF USING SAME    <b>(57) Abstract</b>  An ultrasonic treatment system and method for utilizing ultrasound to treat intravascular conditions, such as stenotic and occluded regions of blood vessels, are provided. The ultrasonic treatment system includes an ultrasonic probe (100), having a proximal and distal end. A guide catheter and guidewire may also be provided and the probe (100) can be slidably disposed within the guide catheter's inner lumen. The probe can include a horn (125) at the proximal end, a transmission member (B, C, D, E) with a proximal and a distal end connected to the horn at the transmission member proximal end (B), and a distal tip (150) connected at the transmission member's distal end. The transmission member may include one or more transmission wires (C, E), having proximal and distal ends connected serially or in parallel.		